

A CASE OF FRACTURE OF THE STYLOID PROCESSES OF THE ULNA AND THE RADIUS BY INDIRECT VIOLENCE.

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A CANADIAN section laborer, æt. 24 years, rather slenderly built, but always well and strong, on July 22, 1889, while helping a fellow workman to lift one side of a handcar, weighing between 600 and 700 pounds, had, after they had together raised their side of the car, the entire weight of that side thrown suddenly and without warning onto him, by his companion's unexpectedly letting go his hold, thus giving a very violent pull to his arms from the sudden access of weight. Great pain and swelling followed in the right wrist, upon which the pull chiefly fell.

July 26, I first saw patient, and found the right wrist and arm very much swollen and discolored, and excessively painful and tender, with abnormal mobility and crepitus about the wrist. At this time accurate diagnosis was impossible, and the arm was kept at rest on a splint with evaporating lotion for a few days. Within a week the swelling had subsided sufficiently to enable me to determine that the styloid process of the ulna had been broken off near its base, forming a freely movable fragment, about the size of a man's fingertip, which when pressed against the end of the ulna gave distinct bony crepitus. There was also a distinct bony crepitus over the styloid process of the radius, due, apparently, to the tearing off of only a small scale of bone corresponding to the attachment of the external lateral ligament, and suggesting strongly the condition often found in Pott's fracture when the ruptured internal lateral ligament has detached a small thin fragment of the internal malleolus. As only a small part of the styloid process of the radius was torn off, this fracture apparently did not involve the articular surface. There was no evidence of other injury to the bones. The union of hand to arm seemed very loose, and suggested a general laceration of carpal and radio-carpal ligaments. The amount of dis-

placement was but slight, as the separated fragments were attached to ligaments, and not to muscles.

August 2, I applied a snugly fitting plaster of-Paris roller from the metacarpo-phalangeal joints to the elbow, with wrist moderately extended and hand slightly inclined toward ulnar side to relax all tension, and compresses so adjusted as to hold the fragments closely in contact with their respective bones.

August 26, plaster removed and fragments found to be firmly united, apparently by bony union, and without any separation or deformity. Wrist was a little stiff, but ten days of passive and active movements enabled him to resume his work with a strong and useful wrist, with every prospect of complete recovery of its function.

The unusual feature in this case is the fact that the fractures resulted from *indirect* violence, the force being transmitted from the part of the hand which grasped the edge of the car through the metacarpal and carpal bones and ligaments, and through the ligaments binding the carpus to the bones of the forearm, and finally pulling off the two bony projections to which the two strongest ligaments are attached.

That *indirect* violence is a very rare cause of this injury is evident from the fact that some authorities in speaking of fracture of the styloid process of the ulna imply, at least, that it is not caused by indirect violence.

Hamilton (Fractures and Dislocations) says: "The occasional complication of a Colles' fracture with a fracture of the styloid process of the ulna has already been noticed. Much more rarely this process is broken alone, as a result of direct violence."

Agnew (Principles and Practice of Surgery) says: "Fractures of this process (styloid process of the ulna) may be produced by direct force, as when a blow is inflicted, or the patient falls upon this part of the arm: It is sometimes broken at the same time with the lower end of the radius (Colles' fracture (?)), most probably in consequence of an extreme tension of the internal lateral ligament."

A most rigid cross-examination of my patient as to the precise manner of the receipt of the injury, going even so far as to suggest that something from the car fell on his wrist, or he struck it against something, or fell on it himself, failed to elicit an admission from him that anything whatever had touched the wrist, and he always insisted that the sudden pull on his hands alone caused his injury. I, therefore, place this case on record as an instance of this injury due to *indirect* violence.